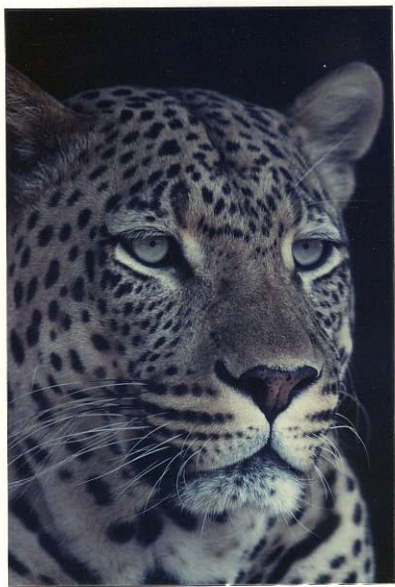


Leopard

in the Lower

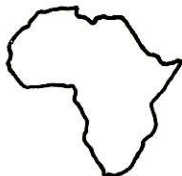
Orange River Basin



LEOPARD IN THE LOWER ORANGE RIVER BASIN- A SURVEY OF THEIR
CONSERVATION STATUS

Survey Report by Chris and Tilde Stuart

A joint project of the AFRICAN CARNIVORE SURVEY and the
Western Province Branch of the WILDLIFE SOCIETY OF
SOUTHERN AFRICA.



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EXECUTIVE SUMMARY

1. Unlike the isolated leopard population of the southern and south-western Cape coastal mountain chain, those leopard occurring in, and adjacent to, the lower Orange River basin are the southern extension of the population occurring in Namibia and to a lesser extent of the Kalahari population to the north-east. This has the obvious advantage of allowing regular gene-flow in a heavily persecuted population.

2. There has been a considerable reduction in leopard numbers within the survey area, particularly during the past 20 years. All farmers interviewed indicated that there had been a decrease in stock losses attributable to leopard and tracks and other sign were only rarely encountered.

3. Two existing conservation areas are located within the study area, namely the Au-grabies Falls National Park in the east and the Fish River Canyon in the west. In the case of the latter it is of the utmost importance that the proposed extension to the Orange River be promulgated and recognised as a conservation area.

4. The proposed Richtersveld National Park will only be able to support a small leopard population, as is the case with the Au-grabies/Riemvasmaak complex.

5. Other than present legislation controlling the hunting of leopard outside the above-mentioned conservation areas, little can be done to improve the protection of leopards within most of the survey area. The main reason for this is, that small-stock farming is the principal agricultural activity in the area and there is no farmer tolerance of larger predators.

6. Although it is obvious that leopard numbers have been greatly reduced in the survey area, it is predicted that small numbers of leopard will continue to survive in the area. Movement of leopard across the Orange River allows for recruitment from the Namibian sector to the more heavily persecuted animals in Cape Province.

7. It seems unlikely that more than 100 leopard occur within the survey area and it is our opinion that this total is probably closer to 50 individuals. It is considered unlikely that more than 5 leopard survive in the Richtersveld. Although leopard numbers were obviously higher in the past, the area probably never supported high leopard densities.

8. In conclusion we feel that other than maintaining the existing conservation areas and establishing the Richtersveld National Park, little can be done to improve leopard numbers in the remainder of the Orange River basin. However, we would like to stress that in other areas of Cape Province, such as the Cedarberg and the Southern Cape, greater efforts should be made to firmly establish the "leopard sanctuary" concept.

INTRODUCTION

The leopard, Panthera pardus, has received considerable attention in recent years and there have been four Pan-African surveys of this cat's status since 1976 (Myers 1976; Eaton 1978; Teer and Swank 1978; Martin and De Meulenaar 1988). Although the leopard has attracted the attention of researchers in the Cape Province, South Africa (see Norton and Stuart references) no specific work has been undertaken on the leopard population located along the lower Orange River and adjacent areas.

This general interest in the leopard had its origins in the fear that the trade in spotted cat skins, primarily for the world fashion market, in the 1960's and 1970's was causing a rapid depletion in the numbers of both the leopard and cheetah on the African continent. However, there has been a growing awareness that the major threat to the continued survival of such species as the leopard has been the rapid growth of human populations and the resultant destruction and modification of existing natural habitats.

Population estimates for the leopard, in the various relevant reports, vary greatly but it is generally agreed that numbers of this cat in the Cape Province are low and that three separate populations exist. Two populations have been the subject of research efforts, namely that found in the Kalahari Gemsbok National Park and the isolated Cape coastal mountain range population. The third recognised population, that located in the lower Orange River basin, has received no attention and it was therefore deemed essential to establish the distribution limits, approximate size of population, limiting factors and farmer attitudes to these leopards.

The survey was undertaken as part of the African Carnivore Survey programme and was funded, in part, by the Western Province Branch of the Wildlife Society of Southern Africa.

Methods used

The survey was divided into three phases, namely literature and document check (including topographical assessment), landowner and other interviews and thirdly, personal assesment in the field.

The first mentioned involved the perusal of the few published works and unpublished reports dealing with leopard in general. Nothing specific is available that covers the present study area. An attempt was made to detect changes in distribution and population sizes. Maps (1: 250 000 and 1: 50 000) were consulted in order to establish probable suitable leopard habitat.. This aspect benefitted from the fact that the senior author had visited the survey area on several different occassions on other research programmes. Every attempt was made to visit most of the "suitable" leopard areas.

Although it was not possible to interview every landowner, or other involved parties, it is felt that a representative sample was selected and an accurate picture established. A standard set of questions was applied, in an attempt to obviate bias and each individual interviewed was subjectively assessed as to reliability.

Due to time limitations field assessments were of necessity limited in scope but nevertheless provided a valuable insight into current carnivore trends in the basin. Methods employed included walking game and stock trails adjacent to the river bank as the fine silt lends itself to the reading of tracks and other sign.

The second method employed involved the setting of scent-posts over distances of two kilometres in areas where leopard were said to have been active in recent times. Although useful in documenting the presence of other carnivore species, no leopard sign was encountered. Scent-posts consist of a cleared circle of fine sand or silt (approximately 1m in diameter) with a few drops of

scent lures deposited in the centre of each circle. Each morning the scent-posts were examined for tracks. Peter Schneekluth of Worcester kindly provided 5 different types of scent bait to be used in the survey.

The presence and status of other carnivores in the survey area was also documented.



Scent-post line

SURVEY AREA

For the purposes of this survey, the lower Orange River basin was taken to extend from the Augrabies Falls National Park in the east, westwards to, and including, the Richtersveld. This area could not be treated in isolation, simply because the leopard population is connected to and continuous with those found along the western Namibian escarpment, and north-eastwards to the Kalahari.

Much of the survey area consists of arid, broken hill country, with narrow belts of riverine woodland fringing the Orange River. With the exception of a few short hill ranges extending to the north and south of the river and the rugged course of the Fish River, much of the remaining terrain consists of flat, open gravel and sand plains, with little, or no, rock or plant cover. Suitable cover is a prerequisite for leopard.

The area is arid, increasingly so from east to west, with the low rainfall being experienced in the summer months.

The only ungulates that occur in any numbers are, unfortunately, domestic stock and wild ungulates are restricted to a few springbok, although steenbok, common duiker and klipspringer are fairly common. Rock hyrax (dassie) and Chacma baboons are particularly common along the banks of the Orange River.

The following photographs indicate the type of terrain in which this small leopard population is found and the adjoining notes pertain to findings in these areas.

Fish River block, Namibia

The Fish River Canyon lies within a vast, rugged area flanked by the Huib Hochland Plateau to the west and the Great Karasberg further to the east. The Fish River flows into the Orange River in that stretch known as the "Grootderm". Vegetation is sparse and game densities low. Leopard are occasionally sighted by hikers in the Canyon bottom-land and sign is not infrequently found to the south of the Hobas camp. Although farmers flanking the conservation area occasionally complain of stock-losses attributable to the leopard, these incidents are infrequent.

The nature conservation personnel consider the leopard to be uncommon and in very low densities. The land extending southwards to the Orange River has been proposed as an extension of the conservation area but to date no final decision has been taken by the authorities. This is of particular importance as it would adjoin the proposed Richtersveld National Park. This large area would be of value to leopard conservation and conservation in general.



Richtersveld

The Richtersveld lies at the southernmost extension of the Namib Desert and as such receives very low rainfall, conditions are generally harsh and vegetation sparse, with the exception of the riverine woodland along the Orange River and the larger, dry river courses. Much of the Richtersveld is dominated by broken hill country with several important ranges, Sandberg, Tataasberg, Paradysberg, Vandersterrberge, Loegberg and Stinkfontein. Ranges further to the south are generally isolated by open sand and gravel flats. Game numbers are very low, and only a few springbok survive, although steenbok, common duiker, grey rhebok, rock dassies and hares are more abundant. Large numbers of sheep and goats, as well as some cattle, are present. The country extending southwards into Namaqualand almost certainly has no resident leopards but it would appear that leopard do move through occasionally.

Evidence indicates that leopards in the Richtersveld are mainly located close to the Orange River, with very occasional records from the interior. Occasionally local herders report stock losses to leopards but descriptions point more to the predator being the black-backed jackal.

The establishment of the Richtersveld National Park will not only benefit the leopard but will also result in increases in potential prey.



Vioelsdrif to Onseepkans

A narrow belt of rugged and sparsely vegetated hills fringes much of the length of the Orange River, with those in Namibia being somewhat broader. Riverine woodland fringes the river, varying considerably in width and density. In some areas irrigated cropland has resulted in the destruction of this woodland. Goats, sheep, cattle, donkeys and horses graze and browse upto the riverbanks. Occasional stock losses attributable to leopard are reported but only on one farm, Boerputs (see map), apparently experiences relatively recent stock losses that can be attributed to leopard. Leopard numbers in this stretch of the basin are apparently very low. During the survey leopard tracks were only encountered once, in damp silt. Although not confirmed by us, we are convinced that there is free movement of leopards across the Orange River, particularly at times of low flow and in areas where there are rapids, islands and rocky intrusions.

Game is restricted ^{to} steenbok, klipspringer, common duiker and substantial numbers of Chacma baboons and rock dassies. There is also some evidence that leopards take fish stranded in pools isolated when river levels fall.

Pressures on leopard would appear to be fewer on the north bank of the River because of a lower level of human utilisation. Leopard occasionally follow the hill range that extends from the River to just north of Poffadder. On the large farm, Klein Pella, leopard are not hunted unless stock losses occur. Farms located on the large, sandy plains to the south have not recorded leopard presence in many years.



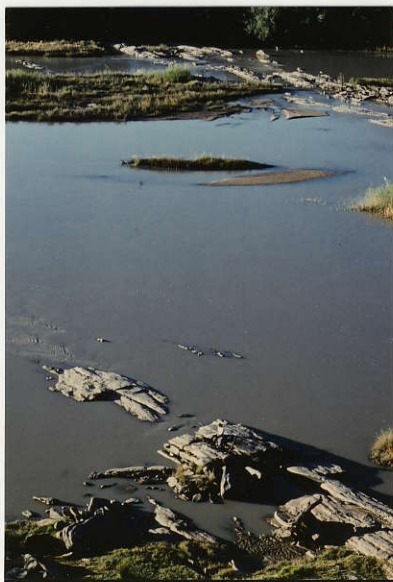
Onseepkans to Augrabies Falls National Park

Similar to the previously discussed stretch, with rugged and sparsely vegetated hills and some patches of riverine woodland varying in density and depth.

Although stock losses, attributable to leopard, are not infrequent, only one farm (Skuitdrift, see map) has recorded substantial losses on a fairly regular basis. Over the past six years this particular farmer claims to have lost approximately 200 sheep and goats and ten calves. All losses were within 8km of the River, although some farmers upto 30km from the River claim that on rare occasions leopard cause losses on their farms. As much as 80% of stock losses occur closer than 10km to the Orange River. Since 1958 26 leopards have been trapped on Skuitdrift, of which the most recent were three females killed in the 1983/4 period. All of these leopards were caught at the same trap site, located on the river bank. It is of interest to note that this trap site is close to a rock strewn rapid and a concrete weir which would allow for easy access from the north to south bank. Despite the setting of scent-post lines (see methods) in this area no leopard were attracted and no recent leopard sign was observed despite extensive exploration of the area. One pile of very old scat was found in a stand of tamarix.

Farmers in this stretch of the river basin all agree that leopard numbers have greatly declined in the past decade. Farmers in the vicinity of the Augrabies Falls National Park occasionally suffer stock losses to leopard, and several of those interviewed were of the opinion that these cats come across the Orange River from Riemvasmaak. Only one leopard has been killed in this eastern area of the basin in the past three years. In the Park itself, staff consider leopards to be uncommon but they do occasionally enter the camp and are recorded as killing eland calves on the north side of the Orange.







Areas to the south of the Orange River.

The rugged country that stretches southwards from the Richtersveld is still utilised as a corridor by leopard and it is possible that a few individuals may be resident in the Springbok and Kamieskroon areas. In October 1988 a leopard was trapped on a farm (Modderfontein) just to the west of Springbok and four individuals were killed in the Kamieskroon district during the past 12 months. Although there are no recent records of animals moving between the northern and southern (escarpment from Van Rhynsdorp) populations, this would be worthy of further investigation.

As already mentioned leopard are occasionally recorded as far south as Poffadder but most farmers located 20km and more south of the Orange River maintain that there are no longer any leopards occurring in the area. Away from the narrow belt of riverine hills and the occasional range that penetrates the southern and northern plains, much of the country consists of open, flat plains. This applies to the entire area to the east of the Richtersveld.



DISCUSSION

The leopard in Cape Province and adjacent areas in Namibia, covered in the survey area, are considered to be problem animals, in that they prey on domestic stock. Unfortunately, surplus killing of stock is fairly frequent and therefore there is little sympathy for this cat in the farming community. In the Cape the Provincial Nature Conservation Ordinance of 1974 declared the leopard a protected species and as such permits have to be obtained to hunt a "problem" animal. The enforcement of this law is, however, extremely difficult, particularly in the area of the lower Orange River basin. It is generally known that not all leopard killed in the area are covered by permits.

Leopard densities in the basin area have probably always been fairly low, as a reflection of the marginal nature of the habitat and comparatively low prey densities. There is no doubt that food is the ultimate determinant of population density. With the human settlement of the area and the introduction of commercial domestic stock, particularly sheep and goats, in recent times, leopard came into direct conflict with mans interests. The considerable decline in leopard range and numbers, particularly in Cape Province, has certainly drastically affected the population inhabiting the lower Orange River basin. Unfortunately, there is still no practical method of counting leopard on a large scale. Population size estimates for this cat vary wildly, depending on the person doing the survey. We estimated potential leopard densities for the survey area by delineating "suitable" leopard habitat and comparing these with similarly arid areas.

Within the lower Orange River survey area we determined that maximum leopard habitat amounted to some 16 875km²

but as mentioned previously this "population" cannot be seen in isolation from the Namibian and Kalahari populations. When compared with estimates for the Kalahari Gemsbok National Park, we arrived at an optimum population level of 222 leopards for the survey area. However, prey availability is much lower than the Kalahari and the present leopard population is far below that which would apply given an ideal situation. It is our opinion that current leopard population levels lie between 50 and 100 individuals, if one includes the Fish River basin. Unfortunately, current information indicates that the population is closest to the lower estimate.

Can the status of leopard in the survey area be improved? Reluctantly, we must say no. The Augrabies Falls National Park/Riemvasmaak, Fish River Canyon block and the proposed Richtersveld National Park will conserve small leopard populations, but those leopard in the remainder of the survey area are unlikely, given present circumstances, to improve their population level. Stricter law enforcement will almost certainly result in further alienation of the farming community and would do nothing to further the conservation process.

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